

ABSTRACT

Methods and apparatus are provided for cleaning a surface within a vessel. A fuel/oxidizer charge is provided within a combustion conduit. An initial deflagration commenced in a first portion of the charge produces a final detonation at least in another portion of the charge to expel a shockwave from the conduit which impinges upon the surface. The deflagration-to-detonation transition may be encouraged by mechanical enhancements and/or by making the first charge portion more detonable than the second.